



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,599	03/23/2001	Seong Min Seo	AB-1111 US	6166

24251 7590 06/19/2003

SKJERVEN MORRILL LLP
25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110

EXAMINER

GREENE, PERSHELLE L

ART UNIT	PAPER NUMBER
----------	--------------

2826

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,599

Applicant(s)

SEO ET AL.

Examiner

Pershelle Greene

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 5-7, 9, 10, 12-27 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 28, 30-33, 35-43, 45 and 46 is/are rejected.
- 7) ☒ Claim(s) 11, 34 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 9 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Application/Control Number: 09/816,599

Page 2

Art Unit: 2826

Serial Number: 09/816599

Attorney's Docket #: AB-1111 US

Filing Date: 03/23/2001

Applicant: Seo et al

Examiner: Pershelle Greene

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species I, figure 2A in Paper No. 17 is acknowledged.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2826

4. Claims 1-4, 8, 28, 30-33, 35-43, and 45-46 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Haung et al. (U.S. Patent # 6,414,385), in view of Hung et al. (U.S. Patent # 6,476,474).

As to claims 1, 28, and 38 Huang et al. shows, in figure 7, a plurality of horizontal leads 326. There is a first chip 310 having input/output pads. A second chip 304 having input/output pads. The input/output pads of the second chip 304 is electrically connected to the first side of the leads. There is a package body formed of a hardened encapsulating material 332. The encapsulant covers at least portions of the chips and at least a portion of the second side of the leads. Huang et al. fails to explicitly show superimposed input/output pads.

Hung is cited for showing a dual-die package structure and method. Specifically, Hung shows superimposed input/output pads. It would have been obvious to one of ordinary skill in the art to use the superimposed I/O pads of Hung with the device of Huang et al. for the purpose of providing a better electrical connection.

As to claims 2-4, 33, 35, 37, 39-41 and 46, Huang et al. shows the second side of each lead including a recessed horizontal surface at the inner end of the lead. The recessed horizontal surface is covered by the encapsulant. The second side of the leads are exposed at the first exterior surface collectively forms rows and columns. The first chip is in a horizontal plane with the leads in the central region.

As to claims 8, 31, 32, and 42-43. It is a matter of designer's choice as to whether or not they are electrically coupled by a reflowed metal ball or an anisotropic conductive film. The operation of the device will not be altered.

Art Unit: 2826

As to claims 30, 36 and 45, the I/O pads over the first side of the leads are electrically connected to the first side of the lead by a wire bond.

Claim Objections

5. Claims 11, 34, and 44 are being objected to as being dependent upon a rejected base claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pershelle Greene whose telephone number is 703-305-3870. The examiner can normally be reached on M-F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 703-308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PLG
June 13, 2003